

## **REMARKS**

Applicants respectfully request that the Examiner reconsider claims 44-69, which remain pending in the present application. In light of at least the comments below, it is believed that these claims are allowable over the cited references.

### **I. Response to 35 U.S.C. §102 Rejection**

Claims 44-48, 51-54, 59-64, and 66-69 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by *Teraoka* (U.S. Patent No. 6,292,836). Applicants respectfully traverse this rejection on the grounds that *Teraoka* fails to disclose each and every element of the claims, as explained in more detail below.

#### **A. Summary of the *Teraoka* Reference**

*Teraoka* discloses a method and apparatus capable of generating a packet having a header as shown in FIG. 3, which is transmitted with the packet. The initially established logical communication channel remains intact and available “even if a computing entity is moved from one computer to another or if a computer in which a computing entity resides is relocated within the network.” (See abstract.)

*Teraoka* further discloses “movement transparency,” which is defined in the reference as “the ability of a computer to communicate with another computer regardless of the latter’s location on a network through the use of unchanging identifiers. The feature allows illustratively a TCP connection to remain unchanged before and after a computer relocation on the network.” (See col. 3, lines 61-66.)

Movement transparency is implemented where “an IP address (location designator) is supplemented by a [virtual Internet protocol] VIP address that is introduced as an identifier specific to each host computer” (col. 4, lines 3-8). “Mapping from any VIP address to the corresponding IP address is done efficiently by use of a cache called an AMT (address mapping table) in the VIP layer” (col. 4, lines 14-16). A VTCP (virtual TCP) connection is introduced, which defines the end points by identifiers VEndPointID and VEndPointAddr, which represent an identifier of an end point (source or destination) and the VIP address of the endpoint (source or destination), respectively (col. 4, lines 48-67).

With respect to FIG. 4, *Teraoka* describes, particularly in col. 5, line 36 through col. 7, line 8, the packet header when a computer is moved within a network. FIG. 4 sub (a) shows a first arrangement where a connection between computer A and computer B is established. A header (having the format shown in FIG. 3) is sent from VEndPoint\_A to VEndPoint\_B for the connection shown in FIG. 4 sub (a). That header is described with respect to FIG. 4 sub (b). FIG. 4 sub (d) shows a second arrangement where the VTCP connection end point VEndPoint\_B is moved from computer B to a computer C. The identifier “VEndPointID\_B” of the VTCP connection end point remains unchanged but the address “VEndPointAddr\_B” is changed to the VIP address of computer C and the port number assigned to computer C (col. 6, lines 20-44). As a result, the header of the packet from A to B becomes as depicted in FIG. 4 sub (e) (col. 6, lines 45-47). Thus, whenever a computing entity is moved to a different computer, the logical communication channel is relocated concurrently (col. 7, lines 58-60).

#### **B. Claims 44-50**

Independent claim 44 is reproduced below:

44. A system for mapping a digital network, the system comprising:

a controller configured to send an initiate signal; and

a plurality of network devices in communication with the controller, each network device configured to receive a transport stream that includes a stream of data packets, each data packet including a header and a data payload, each of the plurality of network devices further configured to receive the initiate signal from the controller;

wherein, *in response to receiving the initiate signal from the controller, each of the plurality of network devices generates a network message and sends the network message to the controller, the network message including information associated with the respective network device;* and

wherein, *in response to receiving the network messages from the network devices, the controller generates a transport stream map, the transport stream map representing a flow of transport streams among the plurality of network devices.*

(Emphasis added)

*Teraoka* fails to disclose the above-highlighted features of claim 44. For example, claim 44 is directed to a system for **mapping** a digital network, wherein the system comprises a controller and **a plurality of network devices** that receive an initiate signal from the controller. Claim 44 further recites that in response to receiving the initiate signal from the controller, **each of the plurality of network devices generates a network message and sends the network message to the controller, the network message including information associated with the respective network device.** *Teraoka* does not teach a controller that sends an initiate signal and a plurality of devices that receive the initiate signal. More particularly, *Teraoka* does not teach that in response to receiving the initiate signal, **each device generates a network message and sends the network message to the controller.** Instead, *Teraoka* appears to teach a connection between two end points and fails to disclose a network message sent from a plurality of devices to a controller, as claimed.

Claim 44 further recites **in response to receiving the network messages from the network devices, the controller generates a transport stream map, the transport stream map representing a flow of transport streams among the plurality of network devices.** *Teraoka* fails to teach that **in response to receiving the network messages from the network devices, the controller generates a transport stream map.** *Teraoka* appears to be silent regarding the concept of transport stream maps, particularly in response to network messages from a plurality of device and particularly a transport stream map **representing a flow of transport streams among the plurality of network devices** as claimed. Instead, *Teraoka* appears to teach unchanging identifiers for computers (end points), to allow the ability of a first computer to communicate with a second computer regardless of the location of the second computer on the network.

For at least these reasons, it is believed that claim 44 is allowable over *Teraoka*. Also, it is believed that claims 45-50 are allowable for at least the reason that they depend directly or indirectly from allowable claim 44.

### C. Claims 51-58

Independent claim 51 is reproduced below:

51. A method of mapping a digital network, the method comprising:

transmitting an initiate signal to a plurality of devices within the digital network, the plurality of devices configured to transmit and receive transport streams, wherein the initiate signal is a request for information;

*receiving a network message from each of the plurality of devices, each network message including a device identifier for identifying the respective device, an input transport stream identifier for identifying one or more transport streams that the respective device receives, and an output transport stream identifier for identifying one or more transport streams that the respective device transmits; and*

*in response to receiving the network messages from the plurality of devices, grouping the devices into tiers and associating a first device of a first tier with a second device of a second tier based on information related to the input transport stream identifiers and output transport stream identifiers.*

(Emphasis added)

*Teraoka* fails to disclose the above-highlighted features of claim 51. For example, claim 51 recites receiving a network message from each of the plurality of devices, each network message including a device identifier for identifying the respective device, *an input transport stream identifier for identifying one or more transport streams that the respective device receives, and an output transport stream identifier for identifying one or more transport streams that the respective device transmits.* *Teraoka* does not teach such a network message including a device identifier, an *input transport stream identifier*, and an *output transport stream identifier*. Although *Teraoka* appears to disclose some types of identifiers, it seems that the identifiers represent end point IDs and end point addresses. However, *Teraoka* does not disclose, in addition to a device identifier, an *input transport stream identifier* and an *output transport stream identifier*, as claimed.

Furthermore, claim 51 recites that in response to the network messages from the devices, the method including *grouping the devices into tiers and associating a first device of a first tier with a second device of a second tier based on information related to the input transport stream identifiers and output transport stream identifiers.* *Teraoka* is silent concerning grouping devices into tiers. And furthermore, *Teraoka* is

silent concerning associating a device from one tier with a device from another tier ***based on information related to the input transport stream identifiers and output transport stream identifiers***, as claimed.

Since *Teraoka* fails to teach at least these aspects of claim 51, it is believed that claim 51 is allowable. Claims 52-58 are also believed to be allowable for at least the reason that they depend directly or indirectly from allowable claim 51.

**D. Claims 59-69**

Independent claim 59 is reproduced below:

59. A method of mapping a digital network, the method comprising:

assigning a unique transport stream identifier to each transport stream of a plurality of transport streams, wherein the plurality of transport streams are transmitted from a plurality of devices included in the digital network and wherein each device of the plurality of devices transmits a plurality of transport streams;

associating each assigned unique transport stream identifier with a particular device of the plurality of devices, wherein the particular device transmits the transport stream having the unique transport stream identifier assigned thereto;

transmitting to each device of the plurality of devices an assigned unique transport stream identifier associated therewith;

receiving a network message from multiple devices of the plurality of devices, each network message including at least one input transport stream identifier; and

using the multiple network messages to determine a hierarchy of devices for the plurality of devices.

*Teraoka* fails to disclose many of the aspects of claim 59. For example, claim 59 is directed to a method including ***assigning a unique transport stream identifier to each transport stream of a plurality of transport streams***; however, *Teraoka* does not assign identifiers to ***transport streams***. Claim 59 also includes ***associating each assigned unique transport stream identifier with a particular device*** that transmits the transport stream having the unique transport stream identifier assigned thereto. *Teraoka* also fails to disclose this aspect of claim 59. In addition, claim 59 includes receiving a

network message from multiple devices of the plurality of devices, where each network message includes *at least one input transport stream identifier*; however, *Teraoka* does not disclose this aspect of claim 59. Claim 59 also includes *using the multiple network messages to determine a hierarchy of devices*, which *Teraoka* fails to disclose.

Applicants respectfully request that the Examiner should specifically point out particular passages of *Teraoka*, if they exist, that might be believed to read on the claims should the Office continue to maintain the rejection of claim 59. Otherwise, the rejection should be withdrawn. Applicants believe that claim 59 is allowable over *Teraoka* for at least the reasons mentioned above and believe that claims 60-69 are also allowable for at least the reason that they depend directly or indirectly from allowable claim 59.

## **II. Response to 35 U.S.C. §103 Rejections**

Claims 49, 50, 55-58, and 65 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Teraoka* in view of *Rao* (U.S. Patent No. 6,789,118). Applicants respectfully traverse this rejection because the cited references, taken alone or in combination, fail to teach or suggest each and every element of the claims. As mentioned above, independent claims 44, 51, and 59 are believed to be allowable over *Teraoka*.

*Rao* appears to teach that a multi-service network switch of FIG. 1 can be partitioned into multiple virtual routers (VRs) where each VR has allocated to it a set of resources (col. 19, lines 20-25). The specific section of *Rao*, i.e. col. 20, lines 41-63, to which the Office Action makes reference, seems to describe the table shown in FIG. 18. However, *Rao* fails to particularly teach or suggest the claimed features of the dependent claims concerning determining conflicts between two TSIDs and resolving any conflicts, as the Office Action seems to allege. Furthermore, *Rao* does not teach or suggest the particular features of the independent claims of the present application and fails to overcome the above-mentioned deficiencies of *Teraoka*.

Concerning claim 44, *Teraoka* and *Rao*, taken alone or in combination, fail to teach or suggest that *in response to receiving the initiate signal from the controller, each of the plurality of network devices generates a network message and sends the network message to the controller, the network message including information*

*associated with the respective network device. Also, the cited references fail to teach or suggest that in response to receiving the network messages from the network devices, the controller generates a transport stream map, the transport stream map representing a flow of transport streams among the plurality of network devices.*

Concerning claim 51, the cited references fail to teach or suggest *receiving a network message from each of the plurality of devices, each network message including a device identifier for identifying the respective device, an input transport stream identifier for identifying one or more transport streams that the respective device receives, and an output transport stream identifier for identifying one or more transport streams that the respective device transmits.* Also, the cited references fail to teach or suggest that *in response to receiving the network messages from the plurality of devices, grouping the devices into tiers and associating a first device of a first tier with a second device of a second tier based on information related to the input transport stream identifiers and output transport stream identifiers.*

Concerning claim 59, the cited references fail to teach or suggest *assigning a unique transport stream identifier to each transport stream of a plurality of transport streams..., associating each assigned unique transport stream identifier with a particular device..., transmitting to each device of the plurality of devices an assigned unique transport stream identifier associated therewith, and receiving a network message from multiple devices of the plurality of devices, each network message including at least one input transport stream identifier.*

For at least reasons, it is believed that independent claims 44, 51, and 59 are allowable over the combination of *Teraoka* and *Rao*. Furthermore, claims 49, 50, 55-58, and 65 are believed to be allowable for at least the reason that they depend directly or indirectly from these allowable independent claims and for the reason that they include additional subject matter that further distinguishes them from the cited references.

**CONCLUSION**

Any other statements in the Office Action that are not explicitly addressed herein are not intended to be admitted. In addition, any and all findings of inherency are traversed as not having been shown to be necessarily present. Furthermore, any and all findings of well-known art and official notice, or statements interpreted similarly, should not be considered well known for at least the specific and particular reason that the Office Action does not include specific factual findings predicated on sound technical and scientific reasoning to support such conclusions.

In light of the foregoing amendments and for at least the reasons set forth above, Applicant respectfully submits that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that the now pending claims 44-69 are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned at (770) 933-9500.

Respectfully submitted,

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